## REMARKS

This is intended as a full and complete response to the Final Office Action dated November 30, 2005, having a shortened statutory period for response set to expire on February 30, 2006. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-27, 42, and 56-67 remain pending in the application upon entry of this response. Claims 56-67 have been added by the Applicant. Claims 1-27 and 42 stand rejected by the Examiner. Reconsideration of the rejected claims is requested for reasons presented below.

The Examiner states that the "Applicant can reinstate claims 43-55 in a response to this office action for rejoiner." The Examiner further states that claims 43-55 are rejected by prior art if reinstated by the Applicant. The Applicant has not reinstated claims 43-55, but has added new claims 56-67. Numerical claim elements (*e.g.*, 43-55) of cancelled claims are not allowed to be reused by the Applicant. Also, the Examiner is unable to reject cancelled claims prior to reinstatement.

Claim 42 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Claim 42 has been amended to remove the term "greater than about." Withdrawal of the rejection is respectfully requested.

Claim 42 stands rejected under 35 U.S.C. 102(b) as being anticipated by Oda et al., U.S. Publication No. 2001-0045604, (herein, "*Oda*"). The Examiner asserts that *Oda* discloses all of the claimed elements of claim 42. The Applicant respectfully traverses the rejection.

*Oda* discloses a process to deposit a doped silicon-germanium material by a CVD process. *Oda* states that "the concentration of dopant may be $1\times10^{20}$ $cm^{-3}$ or less" (paragraph 103, lines 10-11) and "may be $1\times10^{19}$ $cm^{-3}$ or more, with the upper limit being $1\times10^{20}$ $cm^{-3}$, at which diffusion of the dopant is remarkable" (paragraph 136, lines 3-5). Therefore, *Oda* teaches an upper dopant concentration limit of $1\times10^{20}$ $cm^{-3}$.

*Oda* does not teach, show or suggest a method for depositing a silicon germanium film on a substrate comprising placing a substrate within a process

chamber, heating the substrate to a temperature within a range from about 500°C to about 900°C, and exposing the substrate to a deposition gas comprising a silicon-containing gas, a germanium source, a carbon source, hydrogen chloride, and a boron-containing dopant gas to epitaxially and selectively deposit a silicon germanium material on the substrate, wherein the silicon germanium material contains a boron concentration of about $2.5\times10^{21}$ atoms/cm$^3$, as recited in claim 42.

Withdrawal of the rejection is respectfully requested.

Claims 1-27 and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Oda* in view of Steele et al., U.S. Patent No. 5,273,930 (herein *Steele*) and Murthy et al., U.S. Patent No. 6,235,568 (herein *Murthy*). The Examiner asserts that it would have been obvious to one of ordinary skill in the art to form a silicon germanium of *Oda* by using silane with dichlorosilane to deposit a second silicon germanium film as taught by *Steele* and *Oda*. The Examiner further asserts that the subject matter as a whole would have been obvious to select the portion of the prior art's range of dopant concentration, as taught by *Murthy*. The Applicant respectfully traverses the rejection.

*Oda* has been discussed and distinguished above. *Steele* discloses "a method of non-selectively depositing a semiconductor seed layer on both a semiconductor material and a dielectric material" (column 7, lines 5-7, also see column 5, lines 24-37). *Steele* teaches away from selectively depositing the seed layer while remaining silent to epitaxially depositing the seed layer. The Examiner finds the Applicant's earlier response unconvincing and stated that *Oda* "clearly teaches selectively depositing a silicon germanium material on the substrate." However, the Examiner has not provided any motivation for one skilled in the art to combine "a method of non-selectively depositing a semiconductor seed layer" and subsequently depositing a second material thereon as described by *Steele* with the disclosure of *Oda*. The Examiner further states that *Murthy* discloses "a dopant concentration of greater than about $5\times10^{20}$ atoms/cm$^3$" (Current Office Action, citing column 3, lines 42-47).

*Oda*, *Steele*, and *Murthy* do not teach, show or suggest a method for depositing a silicon germanium film on a substrate comprising providing a substrate within a process chamber, heating the substrate to a temperature within a range from about

500°C to about 900°C, exposing the substrate to a first deposition gas comprising silane, germanium, a carbon source, hydrogen chloride, a carrier gas, and at least one dopant gas to epitaxially and selectively deposit a first silicon germanium material on the substrate, wherein the first silicon germanium material contains a dopant concentration of about $2.5\times10^{21}$ atoms/cm$^3$ and exposing the substrate to a second deposition gas comprising dichlorosilane and a germanium source to epitaxially and selectively deposit a second silicon germanium material on the substrate, as recited in claim 1, and claims 2-13 dependent thereon.

Also, *Oda*, *Steele*, and *Murthy* do not teach, show or suggest a selective epitaxial method for depositing a silicon germanium film on a substrate comprising placing a substrate within a process chamber, heating the substrate to a temperature within a range from about 500°C to about 900°C, and exposing the substrate to a deposition gas comprising silane, a germanium source, a carbon source, an etchant source, a carrier gas, and at least one dopant gas to epitaxially and selectively form a silicon germanium material containing a dopant concentration of about $2.5\times10^{21}$ atoms/cm$^3$, as recited in claim 14, and claims 15-27 dependent thereon.

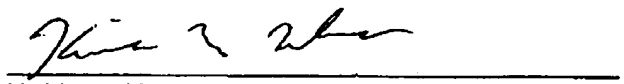
Also, *Oda*, *Steele*, and *Murthy* do not teach, show or suggest a method for depositing a silicon germanium film on a substrate comprising placing a substrate within a process chamber, heating the substrate to a temperature within a range from about 500°C to about 900°C, and exposing the substrate to a deposition gas comprising a silicon-containing gas, a germanium source, a carbon source, hydrogen chloride, and a boron-containing dopant gas to epitaxially and selectively deposit a silicon germanium material epitaxially on the substrate, wherein the silicon germanium material contains a boron concentration of about $2.5\times10^{21}$ atoms/cm$^3$, as recited in claim 42.

Withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the claimed invention.

Having addressed all issues set out in the Final Office Action, the Applicant respectfully submits that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Respectfully submitted,



Keith M. Tackett
Registration No. 32,008
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for the Applicant

419675_2